# 4th ILLINOIS HEALTH DATA
# SUMMIT

4.9.2021 | VACCINATION & POST-COVID HEALTH CHALLENGES

# AGENDA

**8:30 - 9:00 a.m.**

**Welcome & Opening Remarks**
Kesh Kesavadas - Director, Health Care Engineering Systems Center, UIUC
Susan Martinis - Vice Chancellor of Research & Innovation, UIUC
Rashid Bashir - Dean of The Grainger College of Engineering, UIUC
King Li - Dean of the Carle Illinois College of Medicine, UIUC

**9:00 - 9:30 a.m.**

**Keynote I | *Insights and Analytics During COVID-19***
Bala N. Hota, M.D. - Vice President, Chief Analytics Officer, Asc. Chief Medical Officer, & Asc. Chief Information Officer, Rush University Medical College

**9:30 - 10:15 a.m.**

**Keynote II | *Bioengineering for COVID-19: Rapid Acceleration of Diagnostics (RADx) at Unprecedented Speed and Scale***
Bruce J. Tromberg, Ph.D. - Director of the National Institute of Biomedical Imaging & Bioengineering, National Institutes of Health

**10:15 - 10:20 a.m.**

**Break**

**10:20 - 11:20 a.m.**

**Data Science: COVID-19 Screening, Tracing, Vaccination, & Treatment**
**Chair: Carl Gunter, Ph.D. - Professor of Computer Science, UIUC**

*A Psychological Vaccine Against Misinformation*
Sander van der Linden, Ph.D. - Professor of Social Psychology, University of Cambridge

Lucas Glass Ph.D. - Vice President of Artificial Intelligence, IQVIA

*Evolving Data Strategies During the Pandemic*
David Liebovitz, M.D. - Co-Director, Institute for Augmented Intelligence in Medicine, Northwestern University

*Ascertainment Bias, or How to get into a Data Set*
Rebecca Smith, Ph.D. - Assistant Professor of Epidemiology, UIUC

*Measuring Outcomes in Community Medicine and Population Health Work:  OSF St. Francis Medical Center, Peoria, IL*
Mary Stapel, M.D. - Assistant Program Director, University of Illinois College of Medicine Peoria

Ravi Iyer, Ph.D. - George and Ann Fisher Distinguished Professor of Engineering, UIUC

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| **11:20 - 12:20 p.m.** | **Panel: Evidence-Based Policy Making During Crises**<br>**Moderator: Roy Campbell, Ph.D. - Professor of Computer Science, UIUC** |

Sander van der Linden, Ph.D., University of Cambridge
Awais Vaid, M.D. - Deputy Administrator, Champaign Urbana Public
  Health District
Ravi Iyer, Ph.D., UIUC
May Wang, Ph.D. - Professor of Bioengineering, Georgia Tech
Martin Burke, M.D. - May and Ving Lee Professor for Chemical
  Innovation, UIUC
Robert Healy, M.D. - Carle Foundation Hospital

**12:20 - 1:00 p.m.**        **Break**

**1:00 - 1:30 p.m.**        **Keynote III**
Dr. Sarah Patrick, Chief, Division of Emerging Health Issues & Lead,
COVID-19 Data Intelligence Team, Illinois Department of Public Health

**1:30 p.m.**        **Public Session Closing Remarks**

**BALA N. HOTA, M.D.**

Vice President
Chief Analytics Officer
Associate Chief Medical Officer
Associate Chief Information Officer

**Rush University Medical Center
Chicago, IL**

*Insights and Analytics During COVID-19*

Bala Hota is the Vice President, Chief Analytics Officer, Associate Chief Medical Officer, and Associate Chief Information Officer at Rush University Medical Center. He is also a board-certified Infectious Diseases physician and Professor of Medicine. His focus at RUMC has been the development of tools and systems to measure and improve quality of care, and advance data science.

Through effective use of information technology, Hota has developed software products to automate condition reporting and surveillance for public health departments; improved workflows using the EMR to recapture $50M in improved revenue cycle; developed a big data and statistical consulting group to enable advanced analytics and data science on demand; and has successfully built and commercialized software for the measurement of comorbidities for accurate risk adjustment. He has also modeled academic productivity in Informatics, publishing 57 articles on various informatics related topics. Most recently he has focused on quality measurement, identifying and publishing on issues in the US News Hospital Ranking Methodology and the CMS Star Rating System; in both instances the rating systems were improved following the proposals. He is always interested in finding novel methods to leverage information technology to improve the care patients receive.

**BRUCE J. TROMBERG, PH.D.**

Director, National Institute of Biomedical Imaging and Bioengineering

**National Institutes of Health Bethseda, MD**

*Bioengineering for COVID-19: Rapid Acceleration of Diagnostics (RADx) at Unprecedented Speed and Scale*

Bruce Tromberg is the Director of the National Institute of Biomedical Imaging and Bioengineering (NIBIB) at the National Institutes of Health (NIH) where he oversees an approximately $400 million per year portfolio of research programs focused on developing, translating, and commercializing engineering, physical science, and computational technologies in biology and medicine.  In addition, he leads NIBIB's $500 million Rapid Acceleration of Diagnostics (RADx Tech) innovation initiative to increase SARS-COV-2 testing capacity and performance.

Prior to joining NIH in January 2019, Tromberg was a professor of biomedical engineering and surgery at the University of California, Irvine (UCI). Tromberg specializes in the development of optics and photonics technologies for biomedical imaging and therapy. He has co-authored more than 450 publications and holds 23 patents in new technology development as well as bench-to-bedside clinical translation, validation, and commercialization of devices.

Tromberg received his undergraduate training in chemistry from Vanderbilt University (1979) and M.S. and Ph.D. degrees in chemistry from the University of Tennessee (1988) where he was a U.S. Department of Energy/Oak Ridge Associated Universities Fellow at the Oak Ridge National Laboratory.

# ABOUT OUR KEYNOTE SPEAKERS

**SARAH PATRICK, PH.D.**

Chief, Division of Emerging Health Issues
Lead, COVID-19 Data Intelligence Team

**Illinois Department of Public
Health, Springfield, IL**

Sarah Patrick is the Chief of the Division of Emerging Health Issues and lead of the COVID-19 Data Intelligence Team at the Illinois Department of Public Health. She is interested in communicating public health and scientific writing, opioid epidemic addiction and prevention, disease outbreak prevention, and public health leadership. She holds a BS in exercise physiology from the University of Illinois and a MPH and Ph.D. in epidemiology from the University of Pittsburgh Graduate School of Public Health. Patrick is also an assistant professor in public health at Southern Illinois University Carbondale's School of Public Health and Recreation Professions.

**CARL GUNTER, PH.D.**

**George and Ann Fisher Distinguished Professor, Department of Computer Science, University of Illinois Urbana-Champaign**

*Moderator*

Carl Gunter is the George and Ann Fisher Distinguished Professor of Engineering in the department of computer science at the University of Illinois Urbana-Champaign. Gunter researchers security and privacy in computer systems. His current primary projects relate to security and privacy in the healthcare and electric power sectors and for networking. He is the director of Illinois Security Lab (ISL) where he works with a talented group of students, postdoctoral researchers, and research staff.

**SANDER VAN DER LINDEN, PH.D.**

**Professor, Department of Psychology, University of Cambridge**

*A Psychological Vaccine Against Misinformation*

Sander van der Linden is Professor of Social Psychology in Society in the Department of Psychology at the University of Cambridge and Director of the Cambridge Social Decision-Making Lab. His research interests center around the psychology of human judgment, communication, and decision-making, including social norms and networks, attitudes and polarization, reasoning about evidence, and the public understanding of risk and uncertainty. His research spans from social psychology to cognitive science using a variety of techniques, from virtual reality to survey and lab studies to computational science and large-scale (online) interventions.

Van der Linden's research is regularly featured in the popular media, including outlets such as the New York Times, the BBC, CNN, The Economist, NPR, the Washington Post and Time Magazine.

**LUCAS GLASS, PH.D.**

**Vice President of Analytics Center of Excellence, IQVIA**

Lucas Glass is the Vice President of IQVIA's Analytics Center of Excellence. The Center is responsible for researching, developing and operationalizing machine learning and data science solutions in the R&D business. Glass started his career in pharmaceutical data science 15 years ago at Center (then owned by Galt Associates), working on pharmacovigilance data mining algorithms. Since then he has worked at the U.S. Department of Justice in healthcare fraud, several small start-ups, and TTC, LLC, which was acquired by IMS Health in 2012. Glass holds a BA in physics from Boston University, and an MS in biostatistics from Drexel University, and is a Ph.D. candidate at Temple University, where he is researching deep learning embedding techniques on large-scale healthcare data.



**DAVID LIEBOVITZ, M.D.**

**Co-Director, Institute for Augmented Intelligence in Medicine, Center for Medical Education in Data Science and Digital Health**

**Associate Vice Chair for Clinical Informatics &Associate Professor of Medicine, Northwestern University**

*Evolving Data Strategies During the Pandemic*

David Liebovitz is a practicing internal medicine physician also board certified in clinical informatics with engineering training. He has led numerous information technology projects for use in clinical practice and research. Operational leadership experience includes former roles as Chief Medical Informatics Officer at Northwestern Medical Faculty Foundation and Chief Medical Information Officer at University of Chicago Medicine.

His research area of interest is in the field of clinical informatics, and specifically, around aspects of patient safety. His clinical care focus is in general internal medicine, optimizing health quality through specific achievable lifestyle goals augmented by medication or other interventions when necessary.

**REBECCA SMITH, PH.D.**

**Assistant Professor of Epidemiology, College of Veterinary Medicine, University of Illinois Urbana-Champaign**

*Ascertainment Bias, or How to get into a Data Set*

Rebecca Smith is an epidemiologist with an interest in co-morbidities. Smith has extensive training in statistics, with a specialization in longitudinal data analysis and a strong background in risk analysis and disease modeling. She is particularly interested in the ways that data can be used for real-time response to disease.

Smith is a professor in the Department of Veterinary Medicine at the University of Illinois. She received her DVM from Cornell University, her MS in Biosecurity and Risk Analysis from Kansas State University, and completed her PhD in Epidemiology at Cornell University.

**MARY STAPEL, M.D.**

**Assistant Program Director, University of Illinois College of Medicine Peoria**

**Attending Physician, OSFMG Executive Drive MedPeds Clinic**

*Measuring Outcomes in Community Medicine and Population Health Work:  OSF St. Francis Medical Center, Peoria, IL*

Mary Stapel is the assistant program coordinator of the University of Illinois College of Medicine Peoria and an attending physician at the OSF Executive Drive Med-Peds Clinic. She completed her residency and M.D. at UICOMP. Stapel's professional interests include caring for underserved and vulnerable populations internationally, rurally, and in urban/local settings. She is also interested in street medicine, home visiting, and Food as Medicine. Sustainability (environmentally and programmatically) is an area of great concern for her, and she is passionate about orphan and adoptive care, along with care for those with special needs.

**RAVI IYER, PH.D.**

**George and Ann Fisher Distinguished Professor of Engineering, Department of Electrical and Computer Engineering, University of Illinois Urbana-Champaign**

Ravi Iyer is George and Ann Fisher Distinguished Professor of Engineering at the University of Illinois at Urbana-Champaign. He holds joint appointments in the Departments of Electrical and Computer Engineering and Computer Science, in the Coordinated Science Laboratory (CSL), the National Center for Supercomputing Applications, the Carle Illinois College of Medicine, and the Carl R. Woese Institute for Genomic Biology. Iyer leads the DEPEND Group at CSL, with a multidisciplinary focus on systems and software that combine deep measurement driven analytics and machine learning with applications in trust that spans resilience and the security of critical infrastructures and health that spans computational genomics and health analytics focused on personalized medicine. Iyer directs the Illinois/Mayo NSF Center for Computational Biotechnology and Genomic Medicine (CCBGM).

**ROY CAMPBELL, PH.D.**

**George and Ann Fisher Distinguished Professor, Department of Computer Science, University of Illinois Urbana-Champaign**

*Moderator*

Roy Campbell is the Sohaib and Sara Abbasi Professor Emeritus in the department of computer science at the University of Illinois Urbana-Champaign. Campbell's research interests include problems and techniques of complex computer system organization and software engineering such as: cloud computing, software development environments, operating systems, distributed and parallel systems, object-oriented design, networks, real-time systems, programming language design, verification, reliability, abstract data types, synchronization, data bases, security, digital forensics, fault tolerant systems, compilers, machine architecture, and digital video and audio networking.

**SANDER VAN DER LINDEN, PH.D.**

**Professor, Department of Psychology, University of Cambridge**

Sander van der Linden is Professor of Social Psychology in Society in the department of psychology at the University of Cambridge and Director of the Cambridge Social Decision-Making Lab. His research interests center around the psychology of human judgment, communication, and decision-making, including social norms and networks, attitudes and polarization, reasoning about evidence, and the public understanding of risk and uncertainty. His research spans from social psychology to cognitive science using a variety of techniques, from virtual reality to survey and lab studies to computational science and large-scale (online) interventions.

Van der Linden's research is regularly featured in the popular media, including outlets such as the New York Times, the BBC, CNN, The Economist, NPR, the Washington Post and Time Magazine.

**AWAIS VAID, PH.D.**

**Deputy Administrator, Champaign-Urbana Public Health District**

As the Deputy Administrator and the Epidemiologist of the Champaign-Urbana Public Health District, Awais Vaid leads the District's Strategic Planning and Operations with an emphasis on Systems Thinking. He joined the Health District in 2004 after working a year as a Special Projects Coordinator at the Northwest Community Hospital in Suburban Chicago.

Awais Vaid received his Medical Degree (MD) from India and his Masters in Public Health (MPH) from Northern Illinois University specializing in Healthcare Administration and Epidemiology. Awais is a Fellow of the Public Health Leadership Institute at UIC and serves on several Committees and Advisory Boards at the University of Illinois and the general Champaign-Urbana Community.

**RAVI IYER, PH.D.**

**George and Ann Fisher Distinguished Professor of Engineering, Department of Electrical and Computer Engineering, University of Illinois Urbana-Champaign**

Ravi Iyer is George and Ann Fisher Distinguished Professor of Engineering at the University of Illinois at Urbana-Champaign. He holds joint appointments in the Departments of Electrical and Computer Engineering and Computer Science, in the Coordinated Science Laboratory (CSL), the National Center for Supercomputing Applications, the Carle Illinois College of Medicine, and the Carl R. Woese Institute for Genomic Biology. Iyer leads the DEPEND Group at CSL, with a multidisciplinary focus on systems and software that combine deep measurement driven analytics and machine learning with applications in trust that spans resilience and the security of critical infrastructures and health that spans computational genomics and health analytics focused on personalized medicine. Iyer directs the Illinois/Mayo NSF Center for Computational Biotechnology and Genomic Medicine (CCBGM).

**MAY WANG, PH.D.**

**Professor, Department of Bioengineering, Georgia Tech**

May Wang is a professor in the department of bioengineering at Georgia Tech, a Georgia Cancer Coalition Distinguished Cancer Scholar, and the director of Biocomputing and Bioinformatics Core at Emory-Georgia Tech Center of Cancer Nanotechnology Excellence. Her research interests include biomedical computing and modeling such as biomedical informatics, bio-molecular and medical imaging data processing, data management and visualization, bio-molecular pathway modeling, and telemedicine.

**MARTY BURKE, M.D.**

**May and Ving Lee Professor for Chemical Innovation, Professor of Chemistry, University of Illinois Urbana-Champaign**

Marty Burke is the May and Ving Lee Professor for Chemical Innovation and professor of chemistry at the University of Illinois Urbana-Champaign. He also holds appointments in the Carle Illinois College of Medicine, Beckman Institute for Advanced Science and Technology, and the Carl R. Woese Institute for Genomic Biology. His research interests include the synthesis and study of small molecules with protein-like functions. His research group is responsible for the development of a COVID-19 saliva test that has been used over one million times on the University of Illinois campus.

**ROBERT HEALY, M.D.**

**Chief Medical Quality Officer and Physician, Carle Foundation Hospital**

Robert Healy is the Chief Medical Quality Officer and a physician at Carle Foundation Hospital in Urbana, Illinois. He received his medical degree from University of Illinois College of Medicine and has been in practice for more than 20 years. He received his BS from the University of Illinois Urbana-Champaign and his M.D. from the University of Illinois College of Medicine Peoria.

## Thank you to our Illinois Health Data Summit Organizing Committee!

Paul Arnold, Carle Foundation Hospital, University of Illinois Urbana-Champaign
Roy Campbell, University of Illinois Urbana-Champaign
Neal Cohen, University of Illinois Urbana-Champaign
Adam Cross, University of Illinois College of Medicine Peoria
Jonathan Handler, OSF HealthCare
George Heintz, University of Illinois Urbana-Champaign
Ravi Iyer, University of Illinois Urbana-Champaign
T. Kesh Kesavadas, University of Illinois Urbana-Champaign
Sanmi Koyejo, University of Illinois Urbana-Champaign
King Li, University of Illinois Urbana-Champaign
David Liebovitz, Northwestern University
Kaylee Lukacena, University of Illinois Urbana-Champaign
Antonios Michalos, University of Illinois Urbana-Champaign
Michelle Osborne, University of Illinois Urbana-Champaign
Brent Roberts, University of Illinois Urbana-Champaign
Jared Rogers, OSF HealthCare
Veronica Severini, University of Illinois Urbana-Champaign
Rebecca Smith, University of Illinois Urbana-Champaign
Jimeng Sun, University of Illinois Urbana-Champaign
Awais Vaid, Champaign-Urbana Public Health District
John Vozenilek, OSF HealthCare
May Wang, Georgia Tech

The Health Care Engineering Systems Center (HCESC) at the University of Illinois at Urbana-Champaign was established in 2014 as a research center housed under the Coordinated Science Laboratory in The Grainger College of Engineering. HCESC provides clinical immersion and fosters collaboration between engineers and physicians with expertise in the broad areas of simulation technologies, smart health systems, health data analytics, and medical robotics. The Health Care Engineering Systems Center has grown throughout the past six years as a place where engineering meets medicine in innovative ways, designing and developing collaborative solutions that improve health care outcomes.

HCESC manages the Jump Applied Research for Community Health through Engineering and Simulation endowment (ARCHES) with Jump Trading Simulation and Education Center in Peoria, Illinois to provide funding for researchers working at the intersection of health care and engineering. They also manage the Jump Simulation Center located on the University of Illinois campus and the Health Data Analytics Initiative.

### THE HEALTH DATA ANALYTICS INITIATIVE

The Health Data Analytics Initiative is a central hub connecting clinical investigators with AI and data scientists at Illinois, committed to enabling and driving fundamental medical research and improving health care delivery by designing tailored AI and data retrieval solutions for our partners. The initiative has received grants from C3.ai Digital Transformation Institute, NSF, and Discovery Partners Institute.

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